

PhD Data science-enabled telerehabilitation

Applications are invited for a fully-funded three-year PhD scholarship in the cross-disciplinary area of data processing for healthcare. The scholarship is funded by the University's strategic partner CAPITA (<http://www.capita.com/>) and Faculty of Engineering. The successful candidate will work closely with research teams from Departments of Electrical and Electronic Engineering (EEE), and Biomedical Engineering (BME), and CAPITA.

The project will develop a tele-rehabilitation platform for supporting health professionals in the early, as well as later stages, of rehabilitation by providing quantifiable rehabilitation assessment through kinematics assessment. The main goal of the project is to build a data analytics tool that will, as input, take motion parameters from the sensor system and provide accurate assessment of the patient's condition. The system will facilitate early detection of balance/mobility problems in the elderly, and both short-term and long-term care by translating the findings of the technology into realistic goals around the patient's care. The proposed platform will use emerging digital technologies to enable delivery of healthcare remotely by: (a) giving early warning to health professionals on the current patient's condition; (b) flagging up urgency of medical/clinical intervention; (c) assisting in assessing early mobilisation of the patients; and (d) providing visual feedback to patients.

The work will build on recent scientific discoveries in the area of *predictive analytics*, signal information processing, stroke rehabilitation, and computer vision. The clinical trial, designed in collaboration with end-users, will be used to demonstrate benefits of the proposed measures compared to the traditional rehabilitation practice.

The project will be supervised by a multi-disciplinary team with complementary expertise in signal processing and computer vision (V. Stankovic), physiotherapy and stroke rehabilitation (A. Kerr), machine learning and data science (L. Stankovic), and clinical movement analysis, biomechanics and functional analysis (P. Rowe).

In addition to the University of Strathclyde's Postgraduate Certificate in Researcher Professional Development, which includes various transferrable skills training, the student will be integrated into ongoing EU project SENSIBLE and have the opportunity to conduct research at world-leading groups in the area, in Japan, Australia, China and Canada.

Funding is available for UK and EU nationals only. It is fully funded for 3 years, covering tuition fees and offering an annual tax-free stipend starting at £14,553. The project start date is September/October 2017.

Candidates must hold an MEng or MSc degree in Electrical Engineering, Biomedical Engineering, Computer Science or Mathematics. They must possess good programming understanding and skills, notably in C / C++ or Python. Only exceptional candidates with BSc/BEng degrees will be considered.

How to Apply:

Initial enquiries and expressions of interest should be directed to: Dr V Stankovic at vladimir.stankovic@strath.ac.uk or Dr A Kerr at a.kerr@strath.ac.uk